

IN THE CLAIMS:

This listing of claims replaces all prior versions and listings of claims in the application:

1. (original) An apparatus for sealing a puncture extending through tissue, comprising:

a tubular member having a proximal end, a distal end sized for insertion into the puncture, and a lumen extending between the proximal and distal ends;

an elongate occlusion member slidably disposed within the tubular member, the occlusion member comprising a proximal end, and a distal end extending distally through an opening in the distal end of the tubular member;

an expandable member on the occlusion member distal end;

a delivery device coupled to the proximal end of the tubular member, the delivery device comprising a plunger that is advanceable to deliver a sealing compound into the tubular member lumen; and

a retraction assembly coupled to the proximal end of the tubular member and to the occlusion member, the retraction assembly comprising a lock for securing the tubular member in a distal position relative to the occlusion member, and a trigger that is activated by advancement of the plunger to thereby disengage the lock, the retraction assembly being biased to retract the tubular member proximally relative to the occlusion member when the lock is disengaged.

2. (original) The apparatus of claim 1, the occlusion member further comprising:

an outer member comprising proximal and distal ends defining a longitudinal axis therebetween with an inflation lumen extending between the outer member proximal and distal ends, the expandable member comprising proximal and distal ends and having a variable length dimension, the proximal end of the expandable member being coupled to the distal end of the outer member such that an interior of the expandable member is in fluid communication with the inflation lumen, the expandable member being expandable from a collapsed state to an expanded state by introduction of fluid into the interior; and

an inner member slidably coupled to the outer member and comprising proximal and distal ends, the inner member distal end coupled to the expandable member distal end, the inner member slidable relative to the outer member for moving the distal end of the expandable member towards and away from the proximal end of the expandable member when the expandable member is expanded and collapsed, respectively.

3. (original) The apparatus of claim 2, further comprising a housing on the proximal end of the outer member, the housing comprising a chamber in fluid communication with the inflation lumen, a piston slidably disposed within the chamber and coupled to the inner member, a reservoir filled with inflation media and in fluid communication with the chamber, and an actuator that may be activated by a user to direct the inflation media from the reservoir into the chamber and inflation lumen, thereby substantially simultaneously expanding the expandable member and directing the piston proximally to thereby pull the inner member proximally to shorten the expandable member as it expands.

4. (original) The apparatus of claim 3, wherein the actuator may be deactivated to withdraw inflation media from the chamber and the inflation lumen into the reservoir, thereby substantially simultaneously collapsing the expandable member and directing the piston distally to push the inner member distally to lengthen the expandable member as it collapses.

5. (original) The apparatus of claim 3, wherein the proximal and distal ends of the expandable member at least partially evert into the interior of the expandable member as the expandable member expands.

6. (original) The apparatus of claim 1, the retraction assembly further comprising an elongate member extending distally along a proximal portion of the occlusion member, the elongate member comprising one or more connectors on a distal end thereof, the one or more connectors connectable to the proximal end of the tubular member to thereby couple the tubular member to the retraction assembly.

7. (original) The apparatus of claim 6, wherein the occlusion member is coupled to the retraction assembly, the elongate member further comprising a sheath extending over the proximal portion of the occlusion member, wherein the sheath may be received in the tubular member lumen when the occlusion member is inserted therein, the one or more connectors being insertable at least partially into the proximal end of the tubular member to couple the tubular member to the sheath.

8. (original) The apparatus of claim 7, the tubular member further comprising a housing on the proximal end thereof, the housing defining a cavity, the one or more connectors comprising a detent that collapses to allow the detent to be inserted into the cavity when the sheath is received in the tubular member lumen, the detent being biased to extend within the cavity and prevent the detent from being removed easily therefrom.

9. (original) The apparatus of claim 8, the housing comprising one or more side ports communicating with the delivery device, the sheath comprising a lumen and an opening communicating with the lumen that is disposed within the cavity when the detent is inserted into the cavity, the sheath comprising a seal distal to the opening for engaging an inner surface of the tubular member to substantially seal the lumen of the tubular member, such that sealing compound delivered from the delivery device enters the one or more side ports and flows into the opening and through the lumen of the sheath.

10. (original) The apparatus of claim 9, wherein a distal tip of the sheath extends beyond the distal end of the tubular member when the detent is inserted into the cavity, such that the sealing compound is delivered through the lumen of the sheath out the distal tip of the sheath and beyond the distal end of the tubular member.

11-20. (canceled)

21. (previously presented) An apparatus for sealing a puncture extending through tissue, comprising:

an outer member comprising proximal and distal ends defining a longitudinal axis therebetween with an inflation lumen extending between the outer member proximal and distal ends,

an expandable member comprising proximal and distal ends and having a variable length dimension, the proximal end of the expandable member being coupled to the distal end of the outer member such that an interior of the expandable member is in fluid communication with the inflation lumen, the expandable member being expandable from a collapsed state to an expanded state by introduction of fluid into the interior;

an inner member slidably coupled to the outer member and comprising proximal and distal ends, the inner member distal end coupled to the expandable member distal end, the inner member slidable relative to the outer member for moving the distal end of the expandable member towards and away from the proximal end of the expandable member when the expandable member is expanded and collapsed, respectively; and

a housing on the proximal end of the outer member, the housing comprising a chamber in fluid communication with the inflation lumen, a piston slidably disposed within the chamber and coupled to the inner member, a reservoir filled with inflation media and in fluid communication with the chamber, and an actuator that may be activated by a user to direct the inflation media from the reservoir into the chamber and inflation lumen, thereby substantially simultaneously expanding the expandable member and directing the piston proximally to thereby pull the inner member proximally to shorten the expandable member as it expands.

22. (previously presented) The apparatus of claim 21, further comprising a tubular member having a proximal end, a distal end sized for insertion into the puncture, and a lumen extending between the proximal and distal ends, the elongate occlusion member slidably disposed within the tubular member.

23. (previously presented) The apparatus of claim 22, further comprising a delivery device coupled to the proximal end of the tubular member, the delivery device comprising a plunger that is advanceable to deliver a sealing compound from the tubular member lumen into the puncture.

24. (previously presented) The apparatus of claim 22, further comprising a retraction assembly coupled to the proximal end of the tubular member and to the occlusion member, the retraction assembly comprising a lock for securing the tubular member in a distal position relative to the occlusion member, and a trigger that is activated by advancement of the plunger to thereby disengage the lock, the retraction assembly being biased to retract the tubular member proximally relative to the occlusion member when the lock is disengaged.

25. (new) An apparatus for sealing a puncture extending through tissue, comprising:
a tubular member having a proximal end, a distal end sized for insertion into the puncture, and a lumen extending between the proximal and distal ends;

an elongate occlusion member slidably disposed within the tubular member, the occlusion member comprising a proximal end, and a distal end extending distally through an opening in the distal end of the tubular member;

an expandable member on the occlusion member distal end;

a delivery device for delivering a sealing compound from the distal end of the tubular member; and

a retraction assembly coupled to the proximal end of the tubular member and to the occlusion member, the retraction assembly comprising a lock for securing the tubular member in a distal position relative to the occlusion member, and a trigger that is activatable to disengage the lock, the retraction assembly being biased to automatically retract the tubular member proximally relative to the occlusion member when the lock is disengaged while delivering the sealing compound out the distal end of the tubular member.

26. (new) The apparatus of claim 25, wherein the retraction assembly comprises a stop that limits proximal retraction of the tubular member relative to the occlusion member when the lock is disengaged.

27. (new) The apparatus of claim 26, wherein the stop is disposed at a location such that proximal retraction of the tubular member corresponds substantially to a length of a puncture through tissue that is being sealed.

28. (new) The apparatus of claim 25, wherein the delivery device comprises a plunger that is advanceable to deliver the sealing compound through the tubular member lumen and out the distal end of the tubular member, and wherein the trigger is activated by advancement of the plunger to thereby disengage the lock.

29. (new) The apparatus of claim 28, wherein the trigger and lock are spaced apart a predetermined distance such that the lock is released when the sealing compound begins to exit from the distal end of the tubular member.

30. (new) The apparatus of claim 1, wherein the lock is configured to be disengaged while delivering the sealing compound out the distal end of the tubular member.